



Comments of Paul Milgrom and Gregory Rosston

We submit these comments in response to the FCC's Public Notice DA 06-238 regarding the Auction of spectrum for "Advanced Wireless Services." Paul Milgrom is the Shirley and Leonard Ely Professor of Humanities and Sciences in the Economics Department at Stanford University and director of the Market Design program at the Stanford Institute for Economic Policy Research (SIEPR). Gregory Rosston is the Deputy Director of SIEPR and served as Deputy Chief Economist at the Federal Communications Commission. These comments reflect our personal opinions.

Both of us have been actively involved with the FCC auction process since its inception and also in the development of the package bidding procedures. SIEPR and its Market Design program have joined with the FCC to co-host three conferences investigating how to design and implement a package bidding auction to improve the efficiency of the FCC's assignment process.

Package Bidding

The FCC has proposed to auction 1,122 AWS-1 licenses in a single simultaneous multiple round (SMR) auction. As an alternative, the FCC has asked for comment about dividing the licenses into two groups and using the SMR auction for some of the licenses while using a simultaneous multiple round auction with package bidding (SMR-PB) for the remainder of the licenses.

Auctions are a tool to guide license assignment within the overall rubric of spectrum management. Perhaps the most important part of spectrum management is to ensure that spectrum gets into the marketplace. By increasing the available supply of spectrum in the market, the scarcity rents accruing to spectrum owners will be reduced and prices to consumers will be lower. At the same time, increasing the supply of spectrum may reduce the exposure problem in the SMR auctions – with more spectrum available, there is a smaller chance that the price of a license needed to complete a package is very much higher than anticipated.

Implementing package bidding in an appropriate manner holds great promise for improving the efficiency of license assignments. In general, when at least some licenses are complementary, SMR auctions without package bidding suffer from an exposure problem, which can cause bidders to change their strategies and lead to licenses not being awarded to those who value them most highly. A major advantage of the SMR-PB format is that it mitigates the exposure problem; it therefore tends to be most attractive when this problem is most severe.

Stanford University
579 Serra Mall at Galvez Street
Stanford, CA 94305-6015

Phone: (650)•725•1874
Fax: (650)•723•8611

Despite our enthusiasm for package bidding in appropriate applications, we do not think that the current proposal for running a package auction at the same time as an SMR auction would be the best way for the FCC to proceed either for assigning this block of spectrum or for advancing the FCC's package bidding program.

Ideally, the FCC would hold a package bidding auction with a limited number of licenses. SMR auctions began with Auction #1, in which the FCC awarded 10 nationwide narrowband PCS licenses of 3 different types. Subsequently, in Auction #3, it awarded 30 regional narrowband PCS licenses. These two auctions served as tests of the SMR auction process before the FCC used the procedure for more valuable licenses, such as the 99 broadband PCS licenses awarded in auction #4.

The current plan to hold a SMR-PB auction at the same time as a standard SMR auction is an attempt to give bidders cross-auction flexibility. However, the rules of the two auctions would more likely require bidders to commit to one auction or the other before there is enough information to make a well-informed choice. According to the rules of the package auction, bids that are not provisionally winning bids at the end of one round can be reinstated as provisionally winning bids in a later round. A bidder who has bid for a large package is therefore unlikely to bid aggressively in the SMR, for fear of winning in both auctions. The activity rule of the SMR reinforces the problem because it prevents a bidder who has been bidding only in the package auction from switching into the SMR. Running simultaneous, disconnected auctions for similar licenses can make the bidders decision problem very hard. The resulting bidder errors about deciding which auction to pursue aggressively can lead to increased inefficiency and reduced competition and revenues in at least one of the auctions.

If the FCC does decide to conduct the two kinds of auctions, it should consider holding them sequentially. If the auctions are sequenced, it would likely be best to hold the SMR-PB first and the SMR second, because this would enable bidders interested who are most interested in large geographic area licenses but also interested in smaller area licenses to bid for licenses in that order, increasing competition in the auctions and improving the efficiency of the assignment.

If the auctions are sequenced, the time between auctions should be minimal. For example, the FCC could set the date for the upfront payments to be 1 week after the close of the first auction and the commencement of that auction another week after that would probably be sufficiently rapid so as not to cause delay to business plans. We think that with reasonable minimum opening bids could be informed by the results of the SMR-PB auction and other information about relative license values to hasten the completion of the SMR auction.

If a package auction is adopted, the FCC should hold a separate package bidding auction for all or some of the REAG licenses. This would ideally be an auction of 24 or 36 licenses (the E and F blocks or the D, E, and F blocks). The limited number of licenses would be sufficient for aggregations but small enough to allow the auction system (including the bidders) to operate smoothly.

Holding the auctions sequentially sacrifices some flexibility for bidders. When licenses are substitutes, the assignment is most likely to be efficient if the licenses are awarded in a single SMR auction. However, when the advantages of package bidding are present, the loss from two sequenced auctions is likely to be much less severe than from contemporaneous SMR and SMR-PB auctions.

Bidder Identities

With respect to the question of revealing bidder identities, there are both advantages and disadvantages. We both supported the FCC's initial decision to reveal bidder identities during its auctions for two reasons. First, revelation provides information to other bidders, particularly smaller businesses, about the true value of the spectrum, allowing them to make inferences based on the bids of better informed bidders. In addition, revealing bidder identities could help bidders who plan to use common technologies by allowing them to coordinate their purchases.

This same possibility of bidder coordination, however, is also the key disadvantage of revealing bidder identities. It enables bidders who seek to keep prices low to retaliate against their known competitors in order to chill competition in the auction. As time has passed and more spectrum has been subject to market pricing, valuations have become more transparent, and as technologies have evolved, more spectrum has been made available, and national systems have been established, the importance of coordinating technology choices among bidders has dwindled. At this time, the balance of trade-offs has changed. We believe that it would now be prudent for the FCC to conceal bidder identities to protect the competitiveness of the auction and consequently the efficiency of the license assignments.

Paul R. Milgrom

Gregory L. Rosston